

### **REMARKS**

Applicant respectfully requests reconsideration. Claims 1, 7, 13 and 91-96 were pending in this application. Claims 94-96 have been amended. No new matter has been added. Claims 1, 7, 13 and 91-96 remain pending with claim 1 being the sole independent claim.

#### **Claim Rejections Under 35 U.S.C. §112**

Claims 94-96 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite. Applicant has amended the preamble in claims 94-96 to address this rejection. Accordingly, Applicant respectfully requests withdrawal of the claim rejections on this ground.

#### **Rejection of Claims Under 35 U.S.C. §102**

Claims 1, 7, 13, 91, 92 and 93 were rejected as being anticipated by U.S. Patent No. 6,232,264 (Lukehart patent).<sup>1</sup>

Independent claim 1 is directed to a catalyst that comprises a specific ordered intermetallic compound - PtPb. The Office Action relies on description in the "Background of Invention" in the Lukehart patent which refers to previous work that studied PtPb as a catalyst and cites a number of references (column 4, lines 23-27). After studying the Lukehart patent and these references<sup>2</sup>, Applicant concluded that "PtPb" in this text was a typographical error that should have read "PtPd". Applicant contacted Professor Charles Lukehart (inventor from the Lukehart patent) and Vanderbilt University (assignee of the Lukehart patent) to discuss this issue. Professor Lukehart confirmed that the use of "PtPb" was a typographical error and that the text should have read "PtPd". A Certificate of Correction has been filed in connection with the Lukehart patent to correct this typographical error. Applicant is enclosing a copy of this Certificate of Correction with this response.

In view of the previous remarks, the Lukehart patent fails to teach using PtPb in any form as a catalyst, much less using an ordered intermetallic PtPb in a system that oxidizes a fuel selected from the group consisting of formic acid, methanol, ethanol and ethylene glycol as claimed. Because each claim limitation is not taught or suggested by the Lukehart patent, claim 1 is novel in view of this reference.

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<sup>1</sup> In paragraph 6 of the Office Action, only claim 1 is indicated as being rejected in view of the Lukehart patent. However, in subsequent paragraphs related to this rejection, the Office Action refers to claims 7, 13, 91, 92 and 93. Therefore, Applicant assumes that all of these claims stand rejected in view of the Lukehart patent on this ground.

<sup>2</sup> Applicant is citing these references in an IDS filed herewith.

Also, the declarations submitted with the response filed on October 4, 2006 set forth the exceptional catalytic properties (also described in the application) of ordered intermetallic PtPb when oxidizing the fuels recited in claim 1. As noted in the declarations, these properties are entirely unexpected and lead to significant advantages over conventional catalytic materials with respect to these fuels. Such unexpectedly good results are evidence of the non-obviousness of the specific combination of catalyst and fuels recited in claim 1.

For these reasons, claim 1 is both novel and non-obvious in view of the Lukehart patent. The remaining claims that stand rejected on this ground depend from claim 1 and are patentable over the Lukehart patent for at least this reason. Accordingly, Applicant respectfully requests withdrawal of the rejections on this ground.

#### Rejection of Claims Under 35 U.S.C. §103(a) over Lukehart in View of Acker

Claims 94 and 96 were rejected under 35 U.S.C. §103(a) as being unpatentable over the Lukehart patent in view of U.S. Patent No. Publication No. 2002/0102451 (Acker patent).

Claims 94 and 96 depend from claim 1 which is patentable over the Lukehart patent for reasons noted above. Acker also fails to teach or suggest using an ordered intermetallic PtPb compound as a catalyst. Therefore, even if the Lukehart patent is combined with the Acker patent, such combination fails to teach or suggest each feature of claim 1 and, thus, dependent claims 94 and 96.

As described above, the declarations submitted with the response filed on October 4, 2006 set forth the exceptional catalytic properties (also described in the application) of ordered intermetallic PtPb when oxidizing the fuels recited in claim 1. Such unexpectedly good results are further evidence of the non-obviousness of the specific combination of catalyst and fuels recited in the claims.

For at least these reasons, claims 94 and 96 are not obvious in view of the combination of the Lukehart patent in view of the Acker patent.

#### Rejection of Claims Under 35 U.S.C. §103(a) over Lukehart in View of Qi

Claim 95 was rejected under 35 U.S.C. §103(a) as being unpatentable over the Lukehart patent in view of U.S. Patent No. 7,141,322 (Qi patent).

Claim 95 depends from claim 1 which is patentable over the Lukehart patent for reasons noted above. The Qi patent also fails to teach or suggest using an ordered intermetallic PtPb

compound as a catalyst. Therefore, even if the Lukehart patent is combined with the Qi patent, such combination fails to teach or suggest each feature of claim 1 and, thus, dependent claim 95.

As described above, the declarations submitted with the response filed on October 4, 2006 set forth the exceptional catalytic properties (also described in the application) of ordered intermetallic PtPb when oxidizing the fuels recited in claim 1. Such unexpectedly good results are further evidence of the non-obviousness of the specific combination of catalyst and fuels recited in the claims.

For at least these reasons, claim 95 is not obvious in view of the combination of Lukehart in view of Acker.

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